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IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF VIRGINIA
HARRISONBURG DIVISION

STOWE WOODWARD, L.L.C.,	)	
	)	Civil Action Nos. 5:04CV00001
Plaintiff,	)	5:04CV00079
	)	
v.	)	**MEMORANDUM OPINION**
	)	
SENSOR PRODUCTS, INC.,	)	By: Hon. Glen E. Conrad
	)	United States District Judge
Defendant.	)	

The plaintiff Stowe Woodward, L.L.C. ("Stowe") brings two separate actions charging defendant Sensor Products, Inc. ("SPI") with patent infringement with regard to two of Stowe's patents which describe a nip width sensor, United States Patent Nos. 6,769,314 and 6,568,285. These actions have been consolidated by order of this court. This case is before the court on the defendant's motion for partial summary judgment of noninfringement of United States Patent No. 6,568,285 ("the '285 Patent). SPI contends that all of the claims of the '285 Patent are limited to a sensor with a resistive measuring strip made entirely of carbon. Considering the patent with that limitation, SPI concludes that its own E-Nip® ("E-Nip") system, the nip width sensor system accused by Stowe, does not infringe any claim of the '285 Patent. For the reasons set forth below, the defendants's motion will be denied.

FACTUAL BACKGROUND

A nip width sensor is used to electronically measure the contact width between the surfaces of two rollers, such as the rollers used in a printing machine. The sensors described in the '285 Patent measure nip width directly when multiple sensors are mounted on a strip, which is defined as a strip, plate or layer of coherent material, such as a film of flexible plastic material,

having a relatively small thickness as compared to its width and length dimensions. See Exhibit A to SPI's motion for partial summary judgment (hereinafter Ex. A) 11:66-12:2. The strip is then placed between the rollers when the nip is stationary to measure the nip width. The length of the sensors is greater than the nip width. Thus, when the electrically conductive strips of the sensor come into contact with the rollers, the sensor strips flex and come into contact with one another over the nip width. The change in resistance due to the contact of the sensor strips is measured and converted into a length, i.e. the nip width.

The '285 Patent describes several different constructions, or embodiments, that can be used as the sensors that can be mounted on a strip and used to create a multi-sensor system. In the version illustrated in Figures 13-16 of the '285 Patent, Stowe used a membrane sensor composed of two separate strips. The specification indicates the following:

> With reference to FIGS. **13-16**, a membrane sensor **50** according to a third embodiment of the present invention is shown therein. According to the third embodiment, the sensors **4** of the sensing system **1** are membrane sensors **50**. The sensor **50** has an effective sensing length SL and an effective sensing width SW, preferably having dimensions as described above with respect to the sensor **40**. Each sensor **50** includes a plate or strip **52** and an opposed plate or strip **54**. Preferably the strips **52** and **54** are both flexible and resilient. The strips **52, 54** are separated by a gap **56** and are coupled together by electrically insulative edge supports (not shown) in parallel relation.
>
> . . .
>
> The strip **52** is preferably formed of a homogeneous, constant property material having a measurable resistance. Each of the strips **52, 54** preferably has a uniform thickness and a uniform width SW. The per unit length electrical resistance of the material should be uniform so that the total resistance of the strip **52** varies linearly with its length. Preferably, the strip **52** is formed of carbon. The strip **54** is preferably formed of a homogeneous material having a resistance substantially less than the material of the strip **52**. More preferably, the strip **54** is formed of silver, gold or some other highly conductive material. Alternatively, both strips may be formed of a resistive material such as carbon.

Ex. A 23:13-24, 34-46. The specification goes on to describe the two strips as follows:

> Because the silver strip **54** has substantially less resistance per unit length than the carbon strip **52**, between the end points of the nip width NW most of the current between leads L1 and L2 flows through the portion of the silver plate in the nip width NW, as indicated by the double arrow. A relatively small amount of current may also flow through the portion of the carbon strip **52** in the nip width NW as indicated by the single arrow. Thus, the carbon strip **52** is effectively short-circuited or bypassed in the nip width and the resistance value Rf is reduced proportionally to the size of the nip width.

Ex. A 23:58-24:1. The embodiment described above is the one for which Stowe ultimately elected to seek patent protection.

> In the original patent application, Stowe submitted its Claim 1 as follows:
>
> A device for measuring a nip width between two rolls of a press nip, said device comprising:
> (a) a sensor assembly, said sensor assembly including:
> (1) a first strip formed of a first electrically conductive material having a resistance, said first strip having a first end and a second end and a first measuring zone between said first and second ends;
> (2) a second strip disposed adjacent said first strip and formed of a second electrically conductive material, said second strip having a second measuring zone disposed adjacent and substantially coextensive with said first measuring zone; . . .

Exhibit B to SPI's motion for partial summary judgment (hereinafter Ex. B) at 117. On January 16, 2001, the claim examiner rejected Claim 1, and Stowe's other claims, based on the prior art. Ex. B at 189-92. The patent examiner first cited the Goldman patent which described a device for measuring nip width with first and second strips of electrically conductive materials. Ex. B at 190-91. The patent examiner then noted that the Goddin patent described a device including strips connected to electrical circuitry. Ex. B at 191. The patent examiner went on to reject Stowe's claims because "it would be obvious to one of ordinary skill in the art at the time the invention was made to modify Goldman et al according to the teachings of Goddin for the purpose of, providing a pressure sensing element to obtain the pressure developed between two

opposing surfaces one of which is of roll form and another of which is of resiliently deformable material." Ex. B at 191-92.

After Stowe submitted argument in defense of its claims, the patent examiner again rejected the claims by adding prior art in the form of the Webb patent, which had described an electrical circuit connected to a series of conductive strips. Ex. B at 206-08. Stowe's attorneys then arranged a meeting with the patent examiner at which they discussed two issues: (1) the merits of Claim 1 with regard to the applicant's proposed amendment entailing the specific materials of the electrically conductive or resistive materials; and (2) the prior art introduced by the attorney. Ex. B at 210. Stowe's attorneys followed this meeting by submitting a revised Claim 1 which added the following language to the end of Claim 1(a)(1): "the first material being carbon." Ex. B at 220. It also added the following language to the end of Claim 1(a)(2): "the second material being selected from the group consisting of silver and gold." Id. In the letter accompanying the amended claims, the attorney included the following statement: ". . . Applicants submit that neither of these references can fairly suggest strips of the materials recited in amended Claim 1, i.e. that the first electrically conductive material is carbon and the second electrically conductive material is selected from the group consisting of silver and gold." Ex. B. at 217.

Regardless of the amendment, however, the claim examiner rejected the claims once again stating:

> it is the Examiner's position that in Goldman et al., the length of each layer 302, 309 for strip 500 and layers 402, 409 for strip 600, constitutes the measuring area of each strip measured by element 202 in Fig. 6. Also, since layers 302, 402 may be silver deposited from a silver-based ink and layers 309, 409 may be a carbon based material, the measuring area may be silver, carbon or any suitable conductive pattern of material thus

the reference still stands.

Ex. B at 235. Stowe then submitted yet another amendment to its claims stating that the invention did represent a substantial improvement over the prior art because the measuring zones of both strips exceed the nip width, whereas in Goldman, the sensing elements are considerably less than the nip width. Thus, Claim 1(a)(1) was amended to read as follows:

> a first strip formed of a first electrically conductive material having a resistance, said first strip having a first end and a second end and a first measuring zone between said first and second ends, the first measuring zone having a first length that exceeds the nip width, the first material being carbon.

Ex. B at 242. Claim 1(a)(2) was amended to read as follows:

> a second strip disposed adjacent said first strip and formed of a second electrically conductive material, said second strip having a first end and a second end and a second measuring zone disposed adjacent and substantially coextensive with said first measuring zone, the second measuring zone having a second length that exceeds the nip width, the second material being selected from the group consisting of silver and gold.

Ex. B at 242.

The amended claims were rejected once more, however, based on the doctrine of double patentability because of a previous patent, the '230 Patent, also credited to Robert Moore, the inventor of the sensor described in the '285 Patent. The attorneys for Stowe submitted a response to this rejection which stated:

> Applicants respectfully disagree with this conclusion. All of the pending claims recite, inter alia, "a first strip formed of a first electrically conductive material . . ., the first material being carbon" and "a second strip disposed adjacent said first strip and formed of a second electrically conductive material . . ., the second material being selected from the group consisting of silver and gold." These recitations are absent from the claims of Moore, which do not specify any material for the systems and methods recited therein. As such, the current claims do not have "similar limitations" as stated in the Action. Moreover, Moore does not at any point disclose the use of carbon, silver or gold as materials for the sensor . . .

Ex. B at 258-59. After the patent office received Stowe's response, the claims asserted in the '285 patent, as amended, were allowed. Ex. B at 261. Claim 1 includes the language stated above with regard to the materials used in the first and second sensor. Claim 6 of the '285 patent includes identical language with regard to the sensor materials. The remaining claims of the '285 patent (Claims 2-5 and 7-11) depend from either Claim 1 or Claim 6.

SPI's E-Nip system is the allegedly infringing system. That system includes a sensor which has two electrical layers. One layer may be considered a "shunt" electrode because it has a relatively low resistance to the conduction of electrical current. Another layer may be considered a "resistive" electrode because it has a relatively higher resistance to the conduction of electrical current. The configuration of the resistive electrode in conjunction with the shunt electrode provides a device which may be utilized to determine a linear distance along the resistive electrode. The linear distance depends on the positions of contact between the shunt electrode and the resistive electrode.

In the E-Nip system, the resistive electrode is made by a printing process which prints resistive ink onto a backing sheet. The ink is provided by one of two suppliers, Acheson Colloids Company or Ercon Incorporated. The Acheson mixture includes approximately 70% of titanium dioxide ink and 30% of graphite ink. Graphite is a polymorph of carbon. The Ercon mixture includes titanium dioxide, aluminum trihydroxide and carbon inks, which results in a resistive electrode having a resistive material that has no more than 15% carbon. The patent which describes certain elements of the E-Nip system states that the titanium dioxide ink is a resistive ink but is also the non-conductive ink in the resistive electrode. See United States Patent 6,370,967 14:21-24.

DISCUSSION

I. The Legal Standard for Summary Judgment

Under Rule 56 of the Federal Rules of Civil Procedure, summary judgment is properly granted if "there is no genuine issue as to any material fact and the . . . moving party is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c). For a party's evidence to raise a genuine issue of material fact to avoid summary judgment, it must be "such that a reasonable jury could return a verdict for the non-moving party." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986). In deciding a motion for summary judgment, the court must view the record in the light most favorable to the non-moving party. Terry's Floor Fashions, Inc. v. Burlington Industries, Inc., 763 F.2d 604, 610 (4th Cir. 1985).

II. The Legal Standards for Claim Interpretation

When a court analyzes a case of patent infringement, it must follow two steps. First, the court must determine the meaning and scope of the patent claims asserted to be infringed. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff'd 517 U.S. 370 (1996). This step is commonly known as claim construction. Id. Second, the court must compare "the properly construed claims to the device accused of infringing." Id. While the second step entails questions of fact, claim construction is a matter of law for the court. Id. at 970-71. In any case, the patentee has the burden of proving infringement by a preponderance of the evidence. S. Bravo Systems, Inc. v. Containment Technologies Corp., 96 F.3d 1372, 1376 (Fed. Cir. 1996).

When construing a patent claim, a court must first consider the intrinsic evidence: the claims themselves, the specification, and the prosecution history. Markman, 52 F.3d at 979.

Claims should generally be read in accordance with their ordinary meaning, that is, the meaning that would be ordinary to those skilled in the art at the time the patent was applied for. See Electro Med. Sys. S.A. v. Cooper Life Scis., Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994). The claims must also be read "in view of the specification, of which they are a part." Id. The specification may, in fact, be dispositive, in that "it is the single best guide to the meaning of a disputed term." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Nevertheless, "claims are not to be interpreted by adding limitations appearing only in the specification." Electro Med. Sys., 34 F.3d at 1054.

A court may also consider extrinsic evidence, in its discretion, including expert and inventor testimony, dictionaries, and learned treatises, in order to "explain scientific principles, the meaning of technical terms, and terms of art that appear in the patent and prosecution history" as well as "the state of the prior art at the time of the invention." Markman, 52 F.3d at 980. Nevertheless, "the intrinsic record is the primary source for determining claim meaning," and "extrinsic evidence cannot alter any claim meaning discernible from intrinsic evidence." C. R. Bard, Inc. v. U. S. Surgical Corp., 388 F.3d 858, 861-62 (Fed. Cir. 2004).

III. Whether the Claim In the '285 Patent Is Limited to a "First Strip" Formed Only of Carbon

SPI's motion for partial summary judgment essentially states that Stowe cannot meet its burden of demonstrating literal infringement because the first sensor in the '285 Patent is limited to one composed exclusively of carbon, and SPI's E-Nip sensor has a strip composed of other material, in addition to carbon, or graphite. SPI contends that the language used in the claim and the specification should be construed to require the first strip to be formed only of carbon. SPI

also contends that amendments made to the claims during the prosecution of the '285 Patent limit the strip to a carbon-only strip. Stowe responds that neither the claim, the specification, nor the prosecution history of the '285 Patent dictate a construction requiring the material of the first strip to be 100% carbon.

A. The Claims and Specification

SPI contends that the claims in the '285 Patent contain a common limitation. Both Claim 1 and Claim 6, the only independent claims in the patent, include a description of the material of the first strip as follows: "a first strip formed of a first electrically conductive material having a resistance, . . ., the first material being carbon." SPI argues that the only proper interpretation of this language is that the strip must be formed of carbon and nothing else. Stowe concedes that the claims should be construed to require the conductive material in the first strip to be carbon. However, Stowe contends that nothing in the claims or specification requires that the entire first strip be formed only of carbon.

In addition to the language in the claims themselves noted above, SPI points to language in the specification in support of its suggested construction. The specification describes the first strip as "preferably formed of a homogeneous, constant property material" and states "[p]referably, the strip is formed of carbon." SPI concludes that this language must mean that the strip is formed of carbon, and no other material.

Stowe responds that SPI is attempting to import the term "formed entirely of" into this claim and its specification. As Stowe points out, it did use the term "formed entirely of" in other portions of the specification which described embodiments of the invention that were not

pursued with the patent office. For example, in describing an embodiment in Fig. 11 and Fig. 12 of the '285 Patent, the specification states: "The ink traces **43** and **45** are formed entirely of highly conductive material such as silver." Ex. A 22:17-18. The specification goes on to state: "According to one embodiment, the ink traces **47** and **49** may be formed entirely of force sensitive resistive material having a low saturation value relative to the anticipated nip load." Ex. A 22:37-40. Thus, the term "formed entirely of" was used in other portions of the specification, while only the term "formed of" was used in the specification for the pursued embodiment. Based on this distinction, it would be understood that there was no intent for the claim to include such a limitation.

With regard to its use of the term homogenous in the specification, Stowe asserts that it used that term to describe the conductive material alone, rather than the material of the entire strip. More importantly, however, Stowe contends that one of ordinary skill in the art would know that carbon inks, and thus carbon strips, must contain more than just carbon. First, Stowe attempts to introduce several excerpts from the book Polymer Thick Film, published in 1996 by Ken Gilleo in an attempt to help "the court understand the technology and how one of ordinary skill uses terms." The court finds, however, that these excerpts are inadmissible hearsay evidence in that Stowe has failed to present a witness to testify that a person skilled in the art would consider the text to be authoritative. See Fed. R. Evid. 803(18).

Stowe next points to the use of the term "carbon" by Constantin Trantzas, an employee of CIR Systems, Inc., the supplier of the accused E-Nip device for SPI. Stowe notes that in certain pre-litigation documents, Trantzas, who invented certain of the components of the E-Nip system, referred to one of the strips used in the E-Nip device as the "carbon" strip and the material used

on the strip as the "carbon mixture." SPI responds that Stowe is improperly attempting to refer to the alleged infringing product to define what Stowe meant in its claims. See SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1118 (Fed. Cir. 1985) (en banc). The court disagrees. The reference to "carbon" by Trantzas simply indicates how someone skilled in the art, as Trantzas presumably is, would describe such a strip made of carbon as well as other materials. Though Trantzas does refer to the material as a "carbon mixture," he also describes it as only "carbon," though the strip in the E-Nip device is composed primarily of other materials in addition to a smaller percentage of carbon. Such a reference supports Stowe's argument that a person of ordinary skill in the art would understand that the first strip described in the '285 Patent would include carbon as the key conductive material, but that it could contain other materials as well.

With regard to the claim and specification, Stowe finally contends that SPI's proposed claim construction would not cover the preferred embodiments in the '285 Patent. The Federal Circuit has stated that a "claim construction that does not encompass a disclosed embodiment is . . . rarely, if ever, correct." Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1320 (Fed. Cir. 2005) (quoting Johns Hopkins Univ. v. CellPro, 152 F.3d 1342, 1355 (Fed. Cir. 1998)). Stowe asserts that carbon itself is not an ink and is not able to adhere to a plastic surface. Thus, because it must have some adhesive to stick to the strips of the invention, carbon in its pure form could not be used. In addition, carbon itself is not flexible and would break if used on the sensor alone, even if it could adhere to the plastic. Therefore, Stowe concludes that a claim construction that required a sensor made only of carbon would not cover the preferred embodiment.

SPI contends that, even if Stowe's assertions are true, the patent would be invalid for

failure to disclose the best mode, that is, the use of carbon plus an adhesive. See 35 U.S.C. § 112, ¶ 1 ("The specification . . . shall set forth the best mode contemplated by the inventor of carrying out his invention."). In the '285 Patent, however, the claims appear to be identifying only the crucial conductive material and those skilled in the art would understand that an adhesive is needed to get that material, carbon, to stick to the strip. Thus, the adhesive would not necessarily be key to the invention or part of the best mode of its application, rather the key would be the use of carbon as the crucial conductive material.

B. Prosecution History

Along with the claims and the specification, a court may also properly consider the prosecution history of a patent in construing a claim. As previously described, Stowe's original patent application included a broader description of the first and second strips and failed to specify the materials of which the sensors would be composed. After the patent examiner rejected Stowe's patent claims based on the prior art, including the Goldman patent, Stowe amended its claims to specify the material for both strips. SPI contends that this amendment was made solely to distinguish Stowe's claims from the Goldman patent, which disclosed a mixed carbon material sensor that combined carbon with other materials. Though SPI acknowledges that Stowe was compelled to make an additional amendment related to the sensor width to obtain final approval, it points to the earlier amendment as well as Stowe's response in regard to the patent office's later action based on double patentability to support its contention that Stowe had narrowed its claims to include a sensor material for the first strip composed entirely of carbon.

Specifically, SPI points to the language of the amendment itself: "the first material *being*

carbon." Ex. B at 220 (emphasis added). This language remains in the final claims of the '285 Patent. SPI also notes Stowe's attorney's statement during prosecution that "[a]pplicants submit that neither of these references can fairly suggest strips of the materials recited in amended Claim 1, i.e. that the first electrically conductive material *is carbon* and the second electrically conductive material is selected from the group consisting of silver and gold." Ex. B. at 217 (emphasis added). Finally, SPI cites Stowe's attorney's defense to the issue of double patentability: "All of the pending claims recite, inter alia, 'a first strip formed of a first electrically conductive material . . ., the first material *being carbon.*'" Ex. B at 258 (emphasis added). SPI contends that, throughout the prosecution history, Stowe took pains to describe the material as carbon and nothing else, both to distinguish its claims from those in the Goldman patent and from its own claims in the previous patent.[1] Thus, SPI concludes that this history supports its proposed construction of the claims in the '285 Patent to include a first strip with a material of 100% carbon and forecloses any of Stowe's present assertions to the contrary.

Stowe first responds that SPI has incorrectly read the prosecution history. Stowe admits that it added the specific materials to its claims to distinguish them from those of the Goldman patent. Stowe contends, however, that the distinction is not between pure carbon and a carbon-based material but between two strips composed of the same material, as in Goldman, and two strips composed of different materials with different conductivity, as in the '285 Patent. In Goldman, the specification describes two thin, flexible backing sheets or substrates, each of which is provided with a suitable conductive electrode pattern. U.S. Patent 5,821,433 at 2:44-48.

[1] The court recognizes that, even if the narrowing amendments were not actually necessary to overcome the prior art, plaintiff would nevertheless remain bound by the narrower scope. See Springs Window Fashions LP v. Novo Indus., LP, 323 F.3d 989, 995 (Fed. Cir. 2003).

That conductive pattern "may be silver deposited from a silver-based ink that may be screen-printed, for example, on the substrates." U.S. Patent 5,821,433 at 2:48-51. Then,

> A layer of pressure sensitive resistive material **309, 409** is deposited over each of the conductive patterns **302, 402**. The pressure sensitive resistive material may be a carbon molybdenum disulfide material in a polyester binder. Other pressure sensitive resistive materials and high temperature thermoplastic binders may be used as well.

U.S. Patent 5,821,433 at 2:56-61. Thus, Stowe contends that it amended its claims to state that the first material was composed of carbon and the second of silver or gold to distinguish from Goldman which described two conductive patterns where both are composed of silver and the layer of pressure sensitive resistive material in between is composed of a carbon-based material.

Stowe also asserts that its comments to the patent office in regard to the issue of double patentability did not state that the material at issue was entirely carbon. Instead, Stowe contends that it was noting that Moore's prior patent had failed to mention any materials, whereas the current claims did include a description of the materials.

The court finds Stowe's arguments compelling. First, the attorney's statement during prosecution, "the first electrically conductive material is carbon," simply seems to indicate that the conductive material in the first strip is carbon, not necessarily that the entire strip must be made of 100% carbon. Moreover, the patent examiner stated the following in comparing the proposed claims to the Goldman patent:

> Also, since layers 302, 402 may be silver deposited from a silver-based ink and layers 309, 409 may be a carbon based material, the measuring area may be silver, carbon or any suitable conductive pattern of material thus the reference still stands.

With this language, the patent examiner rejected the application. The patent examiner may have

failed to see the distinction raised by Stowe between the two strips formed of the same material in the Goldman patent and the two strips in the proposed invention which were formed of different conductive materials, i.e. carbon and either silver or gold. Regardless, the court believes that this language indicates that the patent examiner also failed to see a distinction between a material described as carbon based and one described simply as carbon.

In conclusion, the court finds that, as a matter of law, it cannot hold that SPI's proposed construction of the '285 Patent is supported by the intrinsic evidence. Instead, the intrinsic evidence, as well as the extrinsic evidence of Trantzas's use of the term "carbon," supports a construction of the '285 Patent wherein the conductive material in the first sensor is carbon. The language of the claims states the following: "a first strip formed of a first electrically conductive material having a resistance . . ., the first material being carbon." The "first material" refers to the first electrically conductive material, not to the entire first strip which may also include adhesives, fillers, or other materials, so long as they are not the primary conductive material.

Nevertheless, SPI's E-Nip sensor is composed of more than simply carbon and an adhesive. In fact, the sensor is composed of approximately 70% titanium dioxide in addition to either carbon or graphite. Constantin Trantzas has previously testified that titanium dioxide as well as graphite are the components that determine the resistivity of the resistive electrode in the E-Nip sensor. Thus, because titanium dioxide is not simply an adhesive, but acts in conjunction with the conductive carbon, SPI concludes that the accused infringing device does not infringe on the '285 Patent. Stowe responds, however, that the titanium dioxide is used only to counter the conductive qualities of the carbon on the more resistive electrode. Thus, according to Stowe, the primary conductive material in the E-Nip sensor is still carbon, which would infringe upon the

claims of the '285 Patent. Though the construction of the '285 Patent claims is a matter of law for the court, this dispute regarding literal infringement raises factual questions that are not appropriate on a motion for summary judgment. Furthermore, even if SPI is correct that there is no literal infringement based on its use of titanium dioxide in the E-Nip sensor, there could still be a claim for infringement under the doctrine of equivalents, unless it were deemed barred by prosecution estoppel.

The court notes that SPI has claimed that, because Stowe has not presented any specific evidence of literal infringement or infringement under the doctrine of equivalents, Stowe cannot meet its burden of demonstrating infringement and, in fact, has conceded the issue. The court does not believe that Stowe was required to present evidence of infringement under either theory in responding to SPI's motion for partial summary judgment. Such evidence would have been properly submitted had Stowe filed its own cross motion for partial summary judgment of infringement of the '285 Patent. Yet, Stowe did not file such a motion. SPI's motion for partial summary judgment of noninfringement was based solely on the theory that the material of the first strip should be construed to be carbon alone. Stowe has properly responded to that issue. To the extent that SPI briefly addressed the issue of whether carbon plus titanium dioxide is equivalent to carbon plus adhesive or filler, Stowe's response raises factual issues to be decided at a later time, as noted above. Therefore, Stowe remains free to pursue its claims of infringement under either doctrine.

IV. Whether Prosecution Estoppel Bars Stowe's Use of the Doctrine of Equivalents

If a claim is not literally infringed, there can still be liability under the doctrine of

equivalents. Prosecution history estoppel may serve as a bar to use of the doctrine of equivalents, however, with regard to subject matter surrendered by the patentee during prosecution. See Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1460 (Fed. Cir. 1998). In other words,

> Prosecution history estoppel limits infringement by otherwise equivalent structures, by barring recapture by the patentee of scope that was surrendered in order to obtain allowance of the claims. Thus, by actions taken during patent prosecution the patentee can be estopped from reaching subject matter that otherwise meets the criteria of equivalency.

California Medical Products, Inc., v. Technol Medical Products, Inc., 921 F. Supp. 2d 1219, 1249 (D. Del. 1995).

SPI contends that Stowe narrowed its claims during the prosecution history as described above, both in the amendment made to include the materials for the first and second strips and through the argument made by Stowe's attorney during the prosecution. SPI also asserts that the amendment was made to overcome the prior art. SPI finally argues that the materials used in the E-Nip sensor's resistive electrode, i.e. titanium dioxide and either carbon or graphite, were well known at the time of the prosecution and amendment and thus were plainly foreseeable at the time of the amendment. See Glaxo Wellcome, Inc. v. Impax Labs, Inc., 356 F.3d 1348, 1352 (Fed. Cir. 2004) (patentee's narrowing amendment bars foreseeable equivalents existing at the time of amendment). Thus, if the court had construed the material in the claims of the '285 Patent to be 100% carbon based upon Stowe's amendment and statements during prosecution of the patent, SPI's product could not be deemed infringing under the doctrine of equivalents, even if the change in its product is unimportant and insubstantial when compared to that described in the '285 Patent, so long as the material used is not 100% carbon.

For the reasons stated previously, however, the court has construed the material in the first strip described in the '285 Patent to be carbon plus some adhesive, filler or other material, so long as carbon is the primary conductive material. The court agrees that Stowe would be estopped by the prosecution history of the '285 Patent to claim that a product infringed under the doctrine of equivalents if carbon was not the primary conductive material in one strip or electrode of an allegedly infringing product. However, Stowe would not be barred from making such a claim with regard to a strip wherein carbon is the primary conductive material, even if it is not composed entirely of carbon.

CONCLUSION

Therefore, for the foregoing reasons, the defendant's motion for partial summary judgment of noninfringement of the '285 Patent will be denied. The court will proceed to consider the proper construction of the remaining claim terms in the '285 Patent and the related United States Patent No. 6,769,314 at a Markman hearing currently scheduled for September 21, 2005.

The Clerk is directed to send certified copies of this Memorandum Opinion and the accompanying Order to all counsel of record.

ENTER: This 11th day of August, 2005.

United States District Judge